then the other; of no plain *Superficies*, but full of little cavities. The ſtone, when broken, is full of ſmall peble ſtones of an Ovall figure: its colour is gray like free-ſtone, but intermixt with veins of yellow and black. A part of it I have begg'd of Dr. *Haughten* for you, which I have ſent to *Oxford*, whither a more exact account will be conveyed by the ſame perſon.

Extract of a Letter, lately written from Venice *by the Learned Doctor* Walter Pope, *to the Reverend Dean of* Rippon, *Doctor* John Wilkins, *concerning the Mines of* Mercury *in* Friuli; *and a way of producing* Wind *by the fall of* Water.

The Mines of *Mercury* in *Friuli*, a Territory belonging to the *Venetians*, are about a days Journey and a half diſtant from *Goritia* Northwards, at a place call'd *Idria*, ſituated in a Valley of the *Julian Alps*. They have been, as I am inform'd, theſe 160. years in the poſſeſſion of the Emperor, and all the Inhabitants ſpeak the *Sclavonian* Tongue. In going thither, we travell'd ſeveral hours in the beſt Wood I ever ſaw before or ſince, being very full of *Firrs*, *Okes*, and *Beeches*, of an extraordinary thickneſs, ſtraitneſs, and height. The Town is built, as uſually Towns in the *Alps* are, all of wood, the Church onely excepted, and another Houſe wherein the Overſeer liveth. When I was there, in *Auguſt* laſt, the Valley, and the Mountains too, out of which the *Mercury* was dugg, were of as pleaſant a verdure, as if it had been in the midſt of Spring, which they there attribute to the moiſtneſs of the *Mercury*; how truly, I diſpute not. That Mine, which we went into, the beſt and greateſt of them all, was dedicated to Saint *Barbara*, as the other Mines are to other Saints, the depth of it was 125. paces, every pace of that Country being, as they inform'd us, more then 5 of our Feet. There are two ways down to it; the ſhorteſt perpendicular way is that, whereby they bring up the Mineral in great Buckets, and by which oftentimes ſome of the workmen come up and down. The other, which is the uſual way, is at the beginning not difficult, the deſcent not being much; the greateſt trouble is, that in ſeveral places you cannot ſtand upright: but this holds not long, before you come to deſcend in earneſt by perpendicular Ladders, where the weight of on's body is found very ſenſible. At the end of each Ladder, there are boards a croſs, where we may breath a little. The Ladders, as was ſaid, are perpendicular, but being imagined produced, do not make one Ladder, but ſeveral parallel ones. Being at the bottom, we ſaw no more then what we ſaw before, only the place, whence the Mineral came. All the way down, and the bottom, where there are ſeveral lanes cut out in the Mountain, is lined and propt with great pieces of Firr-trees, as thick as they can be ſet. They digg the Mineral with Pick-axes, following the veins: 'tis for the moſt part hard as a ſtone, but more weighty; of a Liver-colour, or that of *Crocus Metallorum.* I hope ſhortly to ſhew you ſome of it. There is alſo ſome ſoft Earth, in which you plainly ſee the *Mercury* in little particles. Beſides this, there are oftentimes found in the Mines round ſtones like Flints, of ſeveral bigneſſes, very like thoſe Globes of Hair, which I have often ſeen in *England*, taken out of Oxes bellys. There are alſo ſeveral *Marcaſites* and ſtones, which ſeem to have ſpecks of Gold in them; but upon tryal they ſay, they find none in them. Theſe round ſtones are ſome of them very ponderous, and well impregnated with *Mercury*; others, light, having little or none in them. The manner of getting the *Mercury* is this: They take of the Earth, brought up in Buckets, and put it into a Sive, whoſe bottom is made of wires at ſo great a diſtance, that you may put your finger betwixt them: 'tis carried to a ſtream of running water, and waſh'd as long as any thing will paſs through the Sive. That Earth which paſſeth not, is laid aſide upon an other heap: that which paſſeth, reſerved in the hole, G. in Fig. 1. and taken up again by the ſecond Man, and ſo on, to about ten or twelve ſives proportionably leſs. It often happens in the firſt hole, where the ſecond Man takes up his Earth

Earth, that there is *Mercury* at the bottom; but towards the farther end, where the intervals of the wires are leſs, 'tis found in very great proportion. The Earth laid aſide is pounded, and the ſame operation repeated. The fine ſmall Earth, that remains after this, and out of which they can waſh no more *Mercury*, is put into Iron retorts and ſtopt, becauſe it ſhould not fall into the Receivers, to which they are luted. The fire forces the *Mercury* into the Receivers: The Officer unluted ſeveral of them to ſhew us; I obſerved in all of them, that he firſt poured out perfect *Mercury*, and after that came a black duſt, which being wetted with water diſcover'd it ſelf to be *Mercury*, as the other was. They take the *Caput mortuum* and pound it, and renew the operation as long as they can get any *Mercury* out of it.

This is the way of producing the *Mercury*, they call *Ordinary*, which exceeds that, which is got by waſhing, in a very great proportion, as you will perceive by the account annext. All the *Mercury* got without the uſe of Fire, whether by waſhing, or found in the Mines (for in the digging, ſome little particles get together, ſo that in ſome places you might take up two or three ſpoonfuls of pure *Mercury*) is call'd by them *Virgin-Mercury*, and eſteem'd above the reſt. I inquir'd of the Officer what vertue that had more, then the other; he told me that making an *Amalgama* of Gold and *Virgin-Mercury*, and putting it to the fire, that *Mercury* would carry away all the Gold with it, which common *Mercury* would not do.

The Engins, employed in theſe Mines, are admirable; the Wheels, the greateſt that ever I ſaw in my life; one would think as great as the matter would bear: all moved by the dead force of the water, brought thither in no chargeable Aqueduct from a Mountain, 3 Miles diſtant: the water pumpt from the bottom of the Mine by 52 pumps, 26 on a ſide, is contrived to move other wheels, for ſeveral other purpoſes.

The Labourers work for a *Julio* a day, which is not above 6 or 7 pence, and indure not long; for, although none ſtay under

under ground above 6 hours; all of them in time (ſome later, ſome ſooner) become *paralytick*, and dye *hectick*.

We ſaw there a man, who had not been in the Mines for above half a year before, ſo full of *Mercury*, that putting a piece of *Braſs* in his mouth, or rubbing it in his fingers, it immediately became white like Silver: I mean, he did the ſame effect, as if he had rubb'd *Mercury* upon it, and ſo paralytick, that he could not with both his hands carry a Glaſs, half full of Wine, to his mouth without ſpilling it, though he loved it too well to throw it away.

I have been ſince informed, that here in *Venice*, thoſe that work on the back-ſide of Looking-glaſſes, are alſo very ſubject to the *Palſey*. I did not obſerve, that they had black Teeth; it may be therefore, that we accuſe *Mercury* injuſtly for ſpoiling the Teeth, when given in *Venereal* diſeaſes. I confeſs, I did not think of it upon the place; but, black Teeth being ſo very rare in this Country, I think I could not but have markt it, had all theirs been ſo.

They uſe exceeding great quantity of Wood, in making and repairing the Engins, and in the Furnaces (whereof there are 16, each of them carrying 24. Retorts;) but principally in the Mines, which need continual reparation, the Fir-trees laſting but a ſmall time under ground. They convey their Wood thus: About four miles from the Mines, on the ſides of two mountains, they cut down the Trees, and draw them into the interjacent Valley, higher in the ſame Valley, ſo that the Trees, according to the deſcent of the water lye betwixt it and *Idria*: with vaſt charges and quantities of Wood they make a Lock or Dam, that ſuffers not any water to paſs; they expect afterwards, till there be water enough to float theſe Trees to *Idria*; for, if there be not a ſpring, (as generally there is,) Rain, or the melting of the Snow, in a ſhort time, afford ſo much water, as is ready to run over the Dam, and which (the Flood-gates being open'd) carries all the Trees impetuouſly to *Idria*, where the Bridge is built very ſtrong, and at very oblique Angles to the ſtream, on purpoſe to ſtop them, and throw them on ſhore neer the Mines.

Thoſe Mines coſt the *Emperour* heretofore 70000. or 80000. *Florens* yearly, and yeilded leſs *Mercury* then at preſent, although it coſts him but 28000. *Florens* now. You may ſee what his Imperial Majeſty gets by the following account, of what *Mercury* the Mines of *Idria* have produced theſe laſt three years.

1661	*l.*
Ordinary *Mercury*	198481
Virgin *Mercury*	6194
	204675

1662.	*l.*
Ordinary *Mercury*	225066
Virgin *Mercury*	9612
	234678

1663	*l.*
Ordinary *Mercury*	244119
Virgin *Mercury*	11862
	255981

There are alwaies at work 280 perſons, according to the relation I received from a very civil perſon, who informed me alſo of all the other particulars above-mentioned, whoſe name is *Achatio Kappenjager*; his Office, *Contra-ſcrivano per ſua Maeſtà Ceſarea in Idria del Mercurio*.

To give ſome light to this Narrative, take this Diagramme: *F.* is the water, *C. B.* a veſſel, into which it runs. *DG.EH.FI.* are ſtreams, perpetually iſſuing from that veſſel: *D.E. F.* three ſives, the diſtance of whoſe wires at bottom leſſen proportionably. *G.* the place, wherein the Earth, that paſs'd through the ſive *D.* is retained; from whence 'tis taken by the ſecond man; and what paſſes through the ſive *E.* is retained in *H.* and ſo of the reſt. *K.L. M.* waſt water, which is ſo much impregnated with *Mercury*, that it cureth Itches and ſordid Ulcers. See Fig. 1.

I will treſpaſs a little more upon you, in deſcribing the contrivance of blowing the Fire in the *Braſsworks* of *Tivoli* neer *Rome* (it being new to me) where the Water blows the Fire, not by moving the Bellows, (which is common) but by affording the Wind. See Fig. II. where *A.* is the

River, *B.* the Fall of it, *C.* the Tub into which it falls, *LG.* a Pipe, *G.* the orifice of the Pipe, or Noſe of the Bellows, *GK.* the Hearth, *E.* a hole in the Pipe, *F.* a ſtopper to that hole, *D.* a place under ground, by which the water runns away. Stopping the hole *E*, there is a perpetual ſtrong wind, iſſuing forth at *G*: and *G.* being ſtopt, the wind comes out ſo vehemently at *E*, that it will, I believe, make a Ball play, like that at *Freſcati.*

An Extract of a Letter, containing ſome Obſervations, made in the ordering of Silk-worms, *communicated by that known* Vertuoſo, *Mr.* Dudley Palmer, *from the ingenuous Mr.* Edward Digges.

I herewith offer to your *Society* a ſmall parcel of my *Virginian* ſilk. What I have obſerved in the ordering of Silk-worms, contrary to the received opinion, is:

1. That I have kept leaves 24. hours after they are gathered, and flung water upon them to keep them from withering; yet when (without wiping the leaves) I fed the worms, I obſerved, they did as well as thoſe freſh gathered.

2. I never obſerved, that the ſmell of *Tobacco*, or ſmels that are rank, did any waies annoy the worm.

3. Our Country of *Virginia* is very much ſubject to Thunders: and it hath thundered exceedingly when I have had worms of all ſorts, ſome newly hatched; ſome half way in their feeding; others ſpinning their Silk; yet I found none of them concern'd in the Thunder, but kept to their buſineſs, as if there had been no ſuch thing.

4. I have made many bottoms of the Brooms (wherein hundreds of worms ſpun) of *Holly*; and the prickles were ſo far from hurting them, that even from thoſe prickles they firſt began to make their bottoms.

I did hope with this to have given you aſſurance, that by retarding the hatching of ſeed, two crops of Silk or more might

Fig: II

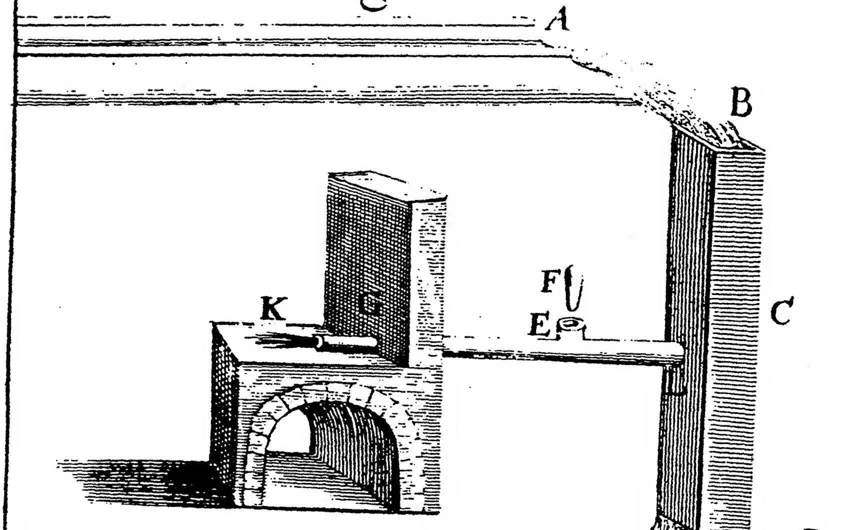

Fig: I